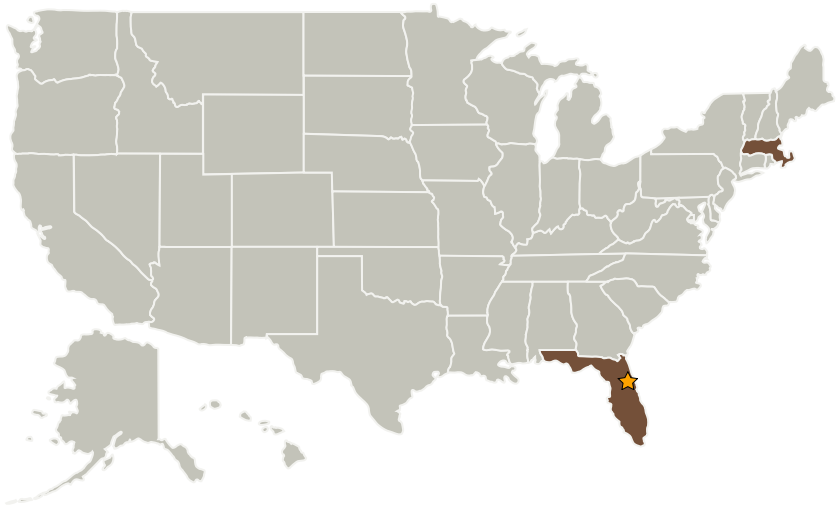
Automated Mulitple Object Optical Tracking and Recognition System, Phase I

Completed Technology Project (2004 - 2004)

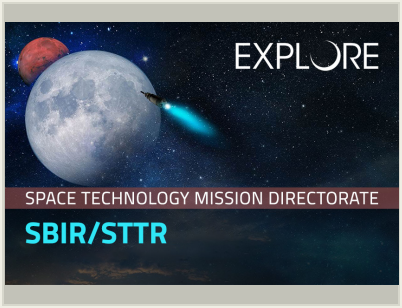
Project Introduction

OPTRA proposes to develop an optical tracking system that is capable of recognizing and tracking up to 50 different objects within an approximately 2 degree x 3 degree field of view. The system output will be 3-dimensional trajectories for each of the objects. The primary function of the system is to monitor the first 2 minutes of a space vehicle launch; following any catastrophic event at launch this system will provide a wealth of detailed information that can be used both in real time, and in subsequent accident analyses. The proposed system consists of three high-resolution digital cameras with telephoto lenses mounted on GPS-equipped servo-controlled ALT/AZ platforms. The system hardware will consist largely of commercially available off-the-shelf components, resulting in proven performance, high reliability, and low cost. A key element in the proposed effort will be the development of robust target identification and tracking algorithms, as well as the algorithms needed to convert the 3 separate 2D trajectory sets to a single 3D trajectory set

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
★Kennedy Space Center(KSC)	Lead Organization	NASA Center	Kennedy Space Center, Florida
Optra, Inc.	Supporting Organization	Industry	Topsfield, Massachusetts



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Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Center / Facility:

Kennedy Space Center (KSC)

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

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Primary U.S. Work Locations	
Florida	Massachusetts

Project Management

Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

Michael Hercher

Technology Areas

Primary:

- TX16 Air Traffic Management and Range Tracking Systems
  - TX16.5 Range Tracking, Surveillance, and Flight Safety Technologies